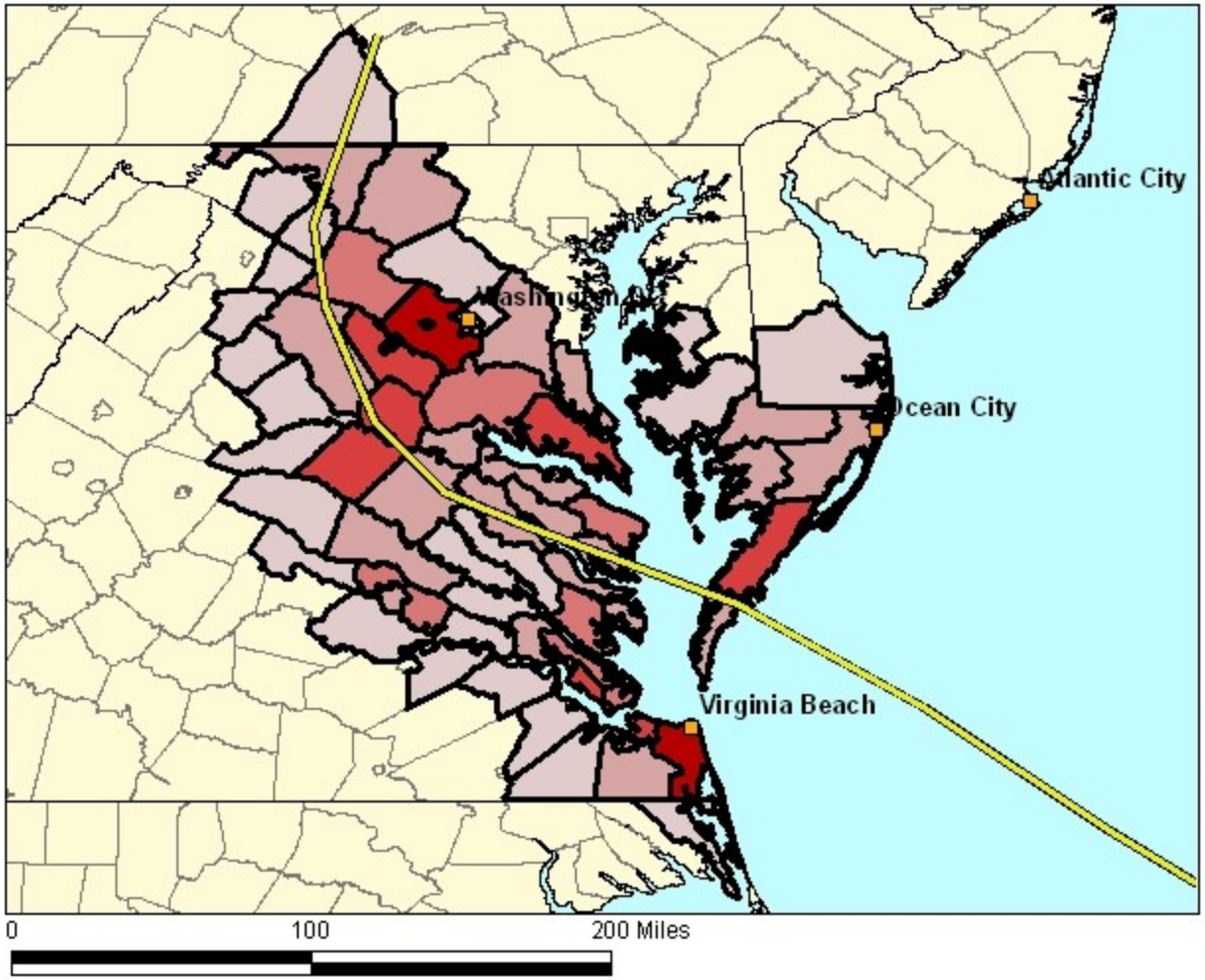
US Army Corps of Engineers

Hurricane Dean 1983 Debris Model

Landfall Plus About 12 Hours

For Official Use Only!



Post Landfall Debris Model Results

Virginia - 11,421,000 Yards
Maryland - 1,829,000 Yards
West Virginia - 126,000 Yards
Delaware - 10,000 Yards
Pennsylvania - 7,000 Yards
North Carolina - 2,000 Yards

Model results per County on following page

This model is based on a Category 3 storm making landfall near Exmore, VA.

Historic Track

Debris

- < 100,000 cubic yards
- 100,000 - 249,999 cubic yards
- 250,000 - 499,999 cubic yards
- 500,000 - 999,999 cubic yards
- >1,000,000 cubic yards

Information provided on this page displays a Category 3 storm making landfall near Exmore, VA. These projections are based on information from the NHC (1100 EDT 09/16/2007) forecast. The amount of debris forecasted is possible total volume, not necessarily the volume that may need to be removed with Federal funds, but does not include volume that may be covered by private insurance. Debris volume may include storm surge generated debris.

Details about this model may be obtained at http://www.englink.usace.army.mil or contact Louisville District staff at DLL-CELRL-GIS@usace.army.mil

Hurricane Dean 1983 Debris Model	
Generated By: Siemsen, LRL 1130 EDT 09/16/2007	
Sources: HURREVAC LRL-DEBRIS	

US Army Corps of Engineers

Hurricane Dean 1983 Debris Model

Landfall Plus About 12 Hours

For Official Use Only!

State	Yards per State	County	Yards per County
Delaware		Sussex	10,000
Delaware	10,000		
District of Columbia		Washington	< 1,000
District of Columbia			
Maryland		Calvert	134,000
		Charles	273,000
		Dorchester	40,000
		Frederick	108,000
		Montgomery	8,000
		Prince Georges	148,000
		Somerset	142,000
		St Marys	544,000
		Talbot	< 1,000
		Washington	164,000
		Wicomico	132,000
		Worcester	136,000
Maryland	1,829,000		
North Carolina		Currituck	2,000
North Carolina	2,000		
Pennsylvania		Franklin	7,000
Pennsylvania	7,000		
Virginia		Accomack	557,000
		Alexandria	182,000
		Arlington	< 1,000
		Caroline	190,000
		Charles City	12,000

State	Yards per State	County	Yards per County
Virginia		Chesapeake	240,000
(continued)		Chesterfield	< 1,000
		Clarke	15,000
		Culpeper	40,000
		Essex	146,000
		Fairfax	1,233,000
		Fairfax City	32,000
		Falls Church	17,000
		Fauquier	140,000
		Fredericksburg	189,000
		Gloucester	316,000
		Goochland	< 1,000
		Hampton City	493,000
		Hanover	137,000
		Henrico	291,000
		Isle Of Wight	26,000
		James City	163,000
		King And Queen	77,000
		King George	169,000
		King William	96,000
		Lancaster	223,000
		Loudoun	302,000
		Louisa	16,000
		Manassas City	81,000
		Manassas Park	14,000
		Mathews	127,000
		Middlesex	185,000
		New Kent	46,000
		Newport News	506,000

The amount of debris forecasted is possible total volume, not necessarily the volume that may need to be removed with Federal funds, but does not include volume that may be covered by private insurance. Debris volume may include storm surge generated debris.

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Hurricane Dean 1983 Debris Model

Generated By:
Siemsen, LRL 1130 EDT 09/16/2007

Sources:
HURREVAC
LRL-DEBRIS

US Army Corps of Engineers

Hurricane Dean 1983 Debris Model

Landfall Plus About 12 Hours

For Official Use Only!

State	Yards per State	County	Yards per County
Virginia		Norfolk City	588,000
(continued)		Northampton	209,000
		Northumberland	271,000
		Orange	29,000
		Poquoson City	91,000
		Portsmouth	143,000
		Prince George	3,000
		Prince William	692,000
		Rappahannock	2,000
		Richmond	127,000
		Richmond City	180,000
		Spotsylvania	559,000
		Stafford	666,000
		Suffolk City	25,000
		Surry	10,000
		Virginia Beach	1,103,000
		Warren	2,000
		Westmoreland	177,000
		Williamsburg	27,000
		York	256,000
Virginia	11,421,000		
West Virginia		Berkeley	75,000
		Jefferson	51,000
West Virginia	126,000		

The amount of debris forecasted is possible total volume, not necessarily the volume that may need to be removed with Federal funds, but does not include volume that may be covered by private insurance. Debris volume may include storm surge generated debris.

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Hurricane Dean 1983 Debris Model

Generated By:
Siemsen, LRL 1130 EDT 09/16/2007

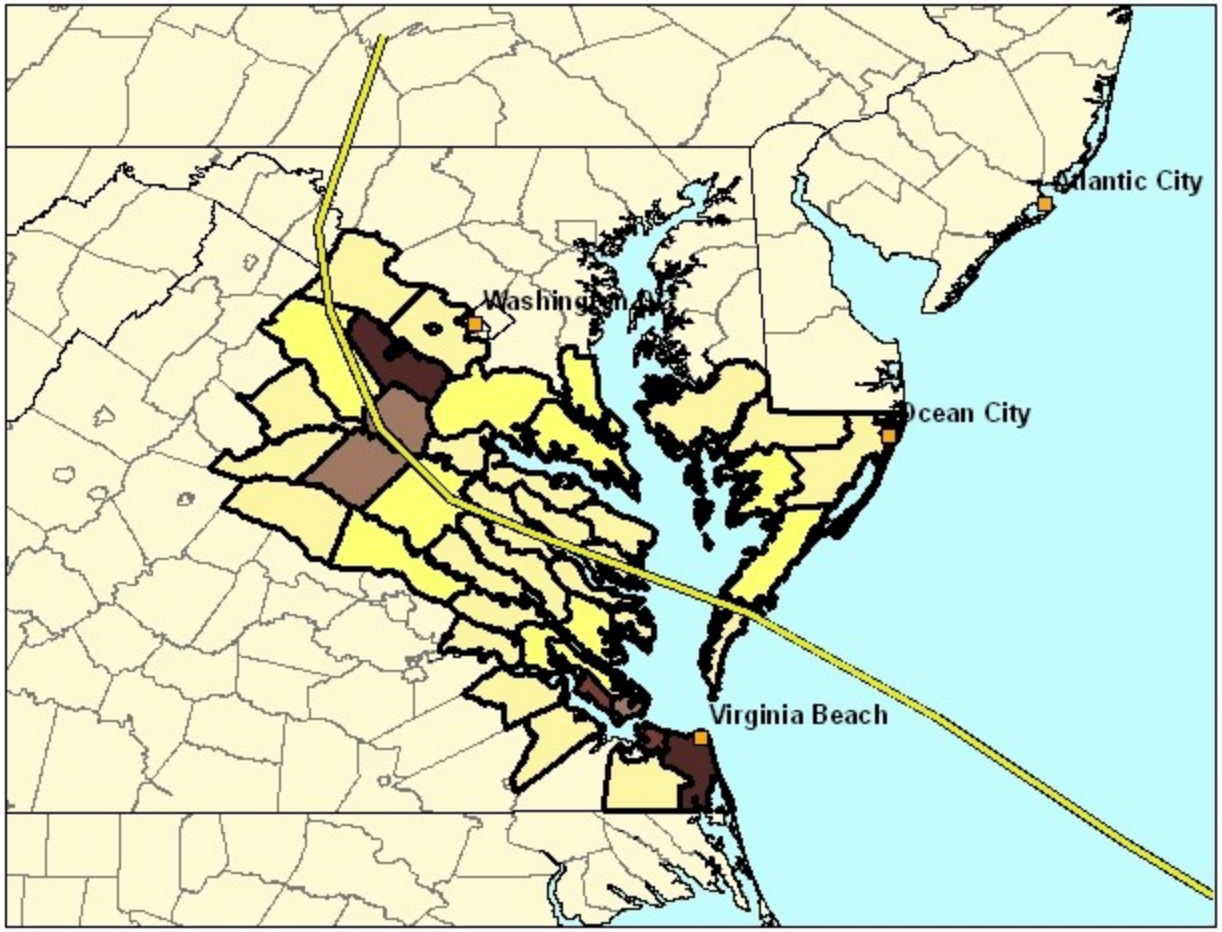
Sources:
HURREVAC
LRL-DEBRIS

US Army Corps of Engineers

Hurricane Dean 1983 Population Model

Landfall Plus About 12 Hours

For Official Use Only!



Post Landfall Population Model Results

Virginia - 1,976,000
Maryland - 241,000

Model results per County on following page

This model is based on a Category 3 storm making landfall near Exmore, VA.

Historic Track

Population

- < 25,000 persons
- 25,000 - 99,999 persons
- 100,000 - 174,999 persons
- 175,000 - 249,999 persons
- > 250,000 persons

Information provided on this page displays a Category 3 storm making landfall near Exmore, VA. These projections are based on information from the NHC (1100 EDT 09/16/2007) forecast. The numbers of persons included in this model output are those that would be included within estimated hurricane force winds (Census 2000 values adjusted to July 2006 values).

Details about this model may be obtained at http://www.englink.usace.army.mil or contact Louisville District staff at DLL-CELRL-GIS@usace.army.mil

Hurricane Dean 1983 Population Model	
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Sources: HURREVAC LRL-DEBRIS	Page 4 of 13

US Army Corps of Engineers

Hurricane Dean 1983 Population Model

Landfall Plus About 12 Hours

For Official Use Only!

State	Population per State	County	Population per County
Maryland		Calvert	34,000
		Charles	48,000
		Dorchester	2,000
		Somerset	26,000
		St Marys	99,000
		Wicomico	16,000
		Worcester	16,000
Maryland	241,000		
Virginia		Accomack	40,000
		Caroline	27,000
		Charles City	< 1,000
		Chesapeake	2,000
		Culpeper	3,000
		Essex	11,000
		Fairfax	< 1,000
		Fauquier	54,000
		Fredericksburg	22,000
		Gloucester	39,000
		Hampton City	146,000
		Hanover	28,000
		Isle Of Wight	< 1,000
		James City	59,000
		King And Queen	7,000
		King George	22,000
		King William	16,000
		Lancaster	12,000
		Loudoun	4,000
		Louisa	< 1,000
		Manassas City	30,000
		Mathews	10,000

State	Population per State	County	Population per County
Virginia		Middlesex	11,000
(continued)		New Kent	16,000
		Newport News	179,000
		Norfolk City	205,000
		Northampton	14,000
		Northumberland	13,000
		Orange	7,000
		Poquoson City	12,000
		Prince William	251,000
		Richmond	10,000
		Spotsylvania	115,000
		Stafford	121,000
		Surry	< 1,000
		Virginia Beach	398,000
		Westmoreland	18,000
		Williamsburg	12,000
		York	62,000
Virginia	1,976,000		

The number of persons estimated to be within the hurricane force winds comes from Census 2000 values adjusted to July 2006 values.

Details about this model may be obtained at http://www.englink.usace.army.mil
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Hurricane Dean 1983 Population Model

Generated By:
Siemsen, LRL 1130 EDT 09/16/2007

Sources:
HURREVAC
LRL-DEBRIS

US Army Corps of Engineers

Hurricane Dean 1983 Households Model

Landfall Plus About **12** Hours

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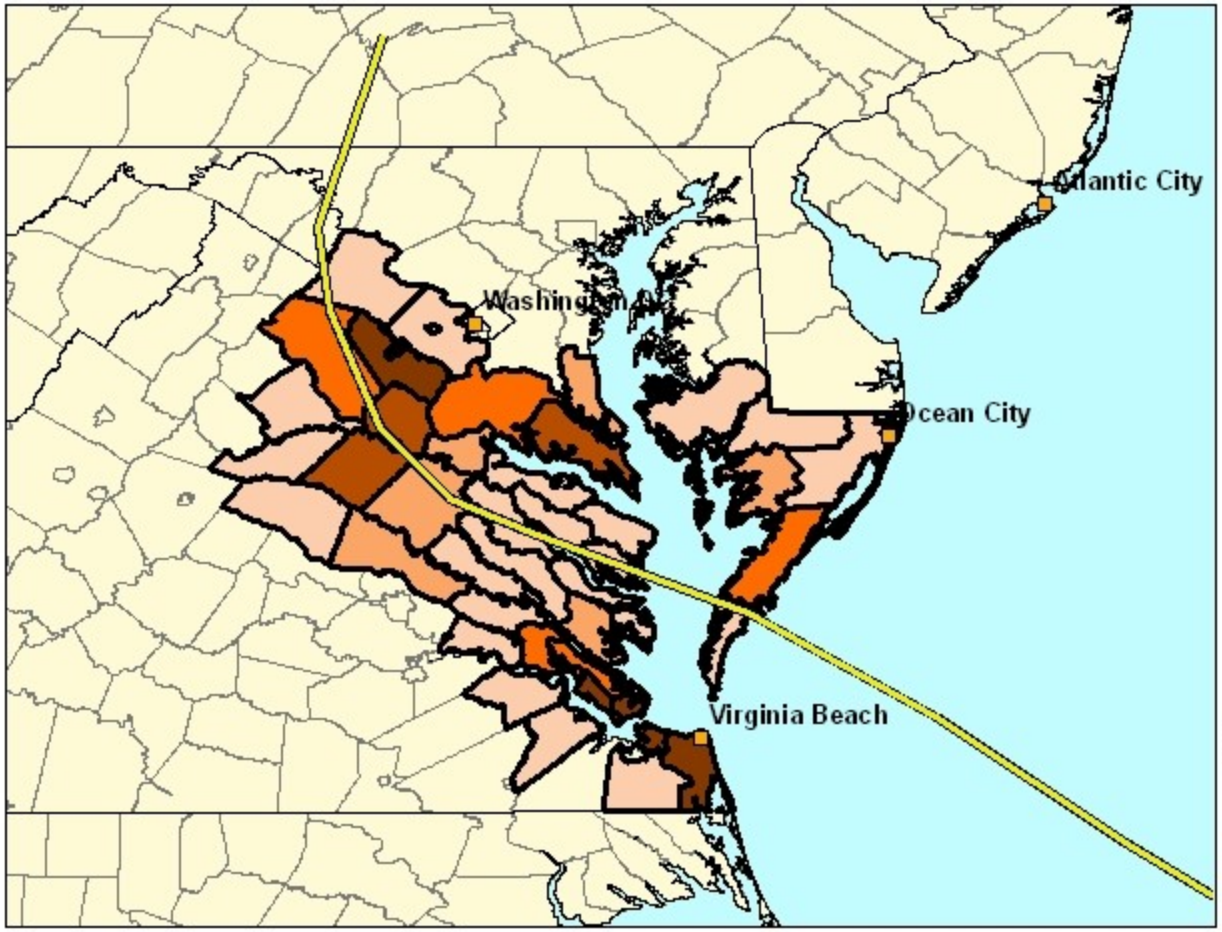

Post Landfall Households Model Results

Virginia - 723,000
Maryland - 88,000

Model results per County on following page

This model is based on a Category 3 storm making landfall near Exmore, VA.

Historic Track

Households

- < 7,500 households
- 7,500 - 14,999 households
- 15,000 - 24,999 households
- 25,000 - 49,999 households
- > 50000 households

Information provided on this page displays a Category 3 storm making landfall near Exmore, VA. These projections are based on information from the NHC (1100 EDT 09/16/2007) forecast. The numbers of households included in this model output are those that would be included within estimated hurricane force winds (Census 2000 values adjusted to July 2006 values).

Details about this model may be obtained at http://www.englink.usace.army.mil or contact Louisville District staff at DLL-CELRL-GIS@usace.army.mil

Hurricane Dean 1983 Households Model	
Generated By: Siemsen, LRL 1130 EDT 09/16/2007	
Sources: HURREVAC LRL-DEBRIS	

US Army Corps of Engineers

Hurricane Dean 1983 Households Model

Landfall Plus About 12 Hours

For Official Use Only!

State	Households per State	County	Households per County
Maryland		Calvert	12,000
		Charles	17,000
		Dorchester	< 1,000
		Somerset	9,000
		St Marys	36,000
		Wicomico	7,000
		Worcester	7,000
Maryland	88,000		
Virginia		Accomack	16,000
		Caroline	10,000
		Charles City	< 1,000
		Chesapeake	< 1,000
		Culpeper	< 1,000
		Essex	5,000
		Fairfax	< 1,000
		Fauquier	19,000
		Fredericksburg	9,000
		Gloucester	15,000
		Hampton City	54,000
		Hanover	10,000
		Isle Of Wight	< 1,000
		James City	24,000
		King And Queen	3,000
		King George	8,000
		King William	6,000
		Lancaster	5,000
		Loudoun	2,000
		Louisa	< 1,000
		Manassas City	10,000
		Mathews	4,000

State	Households per State	County	Households per County
Virginia		Middlesex	5,000
(continued)		New Kent	6,000
		Newport News	69,000
		Norfolk City	75,000
		Northampton	6,000
		Northumberland	6,000
		Orange	3,000
		Poquoson City	5,000
		Prince William	84,000
		Richmond	4,000
		Spotsylvania	40,000
		Stafford	40,000
		Surry	< 1,000
		Virginia Beach	146,000
		Westmoreland	8,000
		Williamsburg	4,000
		York	22,000
Virginia	723,000		

The number of households estimated to be within the hurricane force winds comes from Census 2000 values adjusted to July 2006 values.

Details about this model may be obtained at http://www.englink.usace.army.mil
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Hurricane Dean 1983 Households Model

Generated By:
Siemsen, LRL 1130 EDT 09/16/2007

Sources:
HURREVAC
LRL-DEBRIS

US Army Corps of Engineers

Hurricane Dean 1983 Commodities Model

Landfall Plus About **12** Hours

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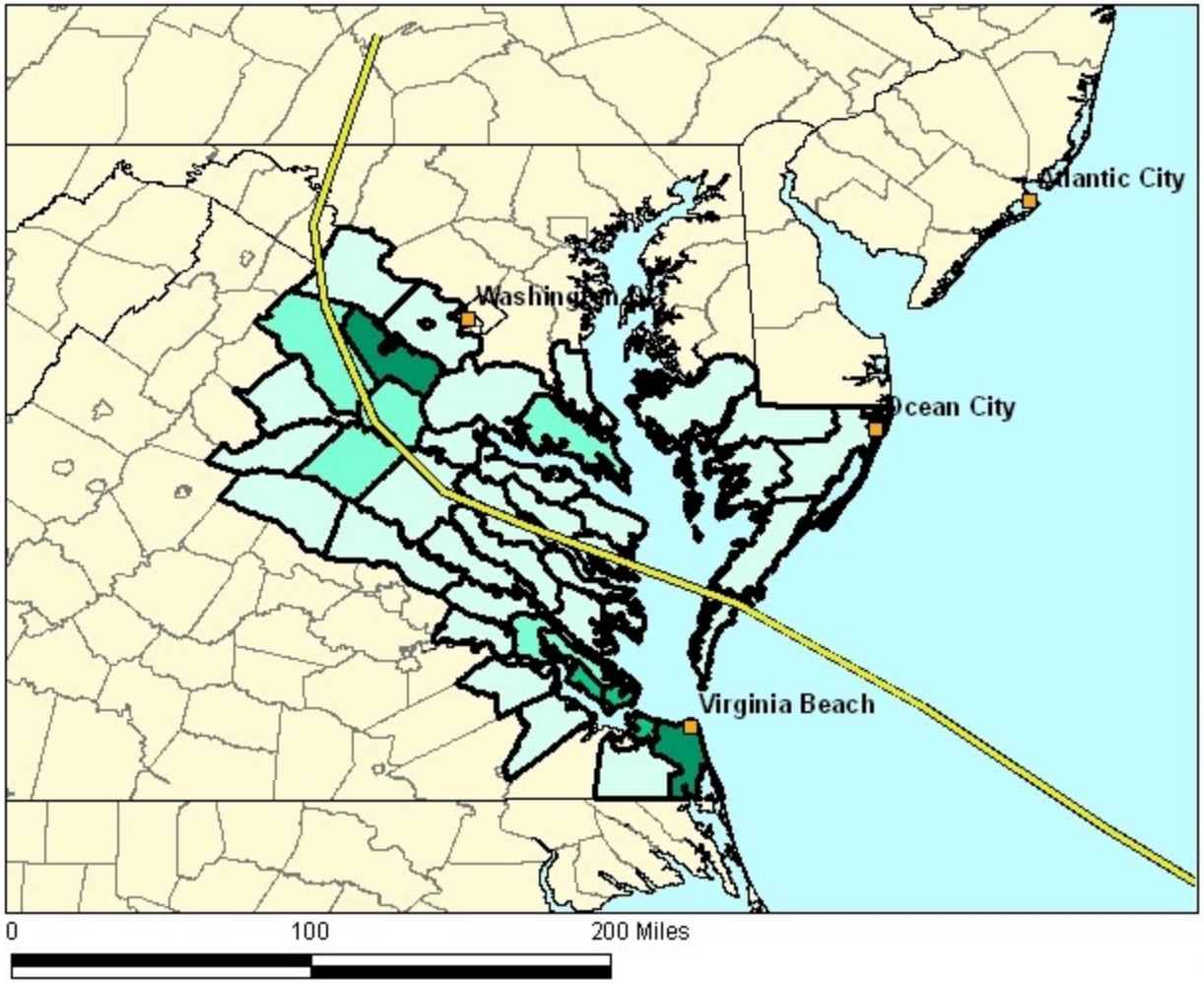

Post Landfall Ice/Water Model Results

Day One / Day Two / Day Three
VA – 45/90/180 Truckloads
MD – 6/12/23 Truckloads

Model results per County on following page

This model is based on a Category 3 storm making landfall near Exmore, VA.

Historic Track

Commodities

- < 5 Trucks Each
- 5 - 10 Trucks Each
- 11 - 20 Trucks Each
- 21 - 40 Trucks Each
- > 40 Trucks Each

Information provided on this page displays a Category 3 storm making landfall near Exmore, VA. These projections are based on information from the NHC ***(1100 EDT 09/16/2007)*** forecast. The amount of commodities forecasted is based on Mission Guide Book requirements and SME input. The graphic represents single day needs with full distribution system in place and operating.

Details about this model may be obtained at http://www.englink.usace.army.mil
or contact Louisville District staff at DLL-CELRL-GIS@usace.army.mil

Hurricane Dean 1983 Commodities Model	
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Sources: HURREVAC LRL-DEBRIS	Page 8 of 13

US Army Corps of Engineers

Hurricane Dean 1983 Commodities Model

Landfall Plus About 12 Hours

For Official Use Only!

State	Truckloads per State	County	Truckloads per County
Maryland		Calvert	3
		Charles	4
		Dorchester	1
		Somerset	3
		St Marys	8
		Wicomico	2
		Worcester	2
Maryland	23		
Virginia		Accomack	4
		Caroline	3
		Charles City	1
		Chesapeake	1
		Culpeper	1
		Essex	1
		Fairfax	1
		Fauquier	5
		Fredericksburg	2
		Gloucester	4
		Hampton City	12
		Hanover	3
		Isle Of Wight	1
		James City	5
		King And Queen	1
		King George	2
		King William	2
		Lancaster	1
		Loudoun	1
		Louisa	1
		Manassas City	3
		Mathews	1

State	Truckloads per State	County	Truckloads per County
Virginia		Middlesex	1
(continued)		New Kent	2
		Newport News	15
		Norfolk City	17
		Northampton	2
		Northumberland	2
		Orange	1
		Poquoson City	1
		Prince William	21
		Richmond	1
		Spotsylvania	10
		Stafford	10
		Surry	1
		Virginia Beach	32
		Westmoreland	2
		Williamsburg	1
		York	5
Virginia	180		

The amount of commodities forecasted is based on Mission Guide Book requirements and SME input and the above table indicates suggested needs based on phased deployment of a commodities distribution system.

Details about this model may be obtained at http://www.englink.usace.army.mil
or contact Louisville District staff at DLL-CELRL-GIS@usace.army.mil

Hurricane Dean 1983 Commodities Model

Generated By:
Siemsen, LRL 1130 EDT 09/16/2007

Sources:
HURREVAC
LRL-DEBRIS

US Army Corps of Engineers

Hurricane Dean 1983 Temp Housing Model

Landfall Plus About 12 Hours

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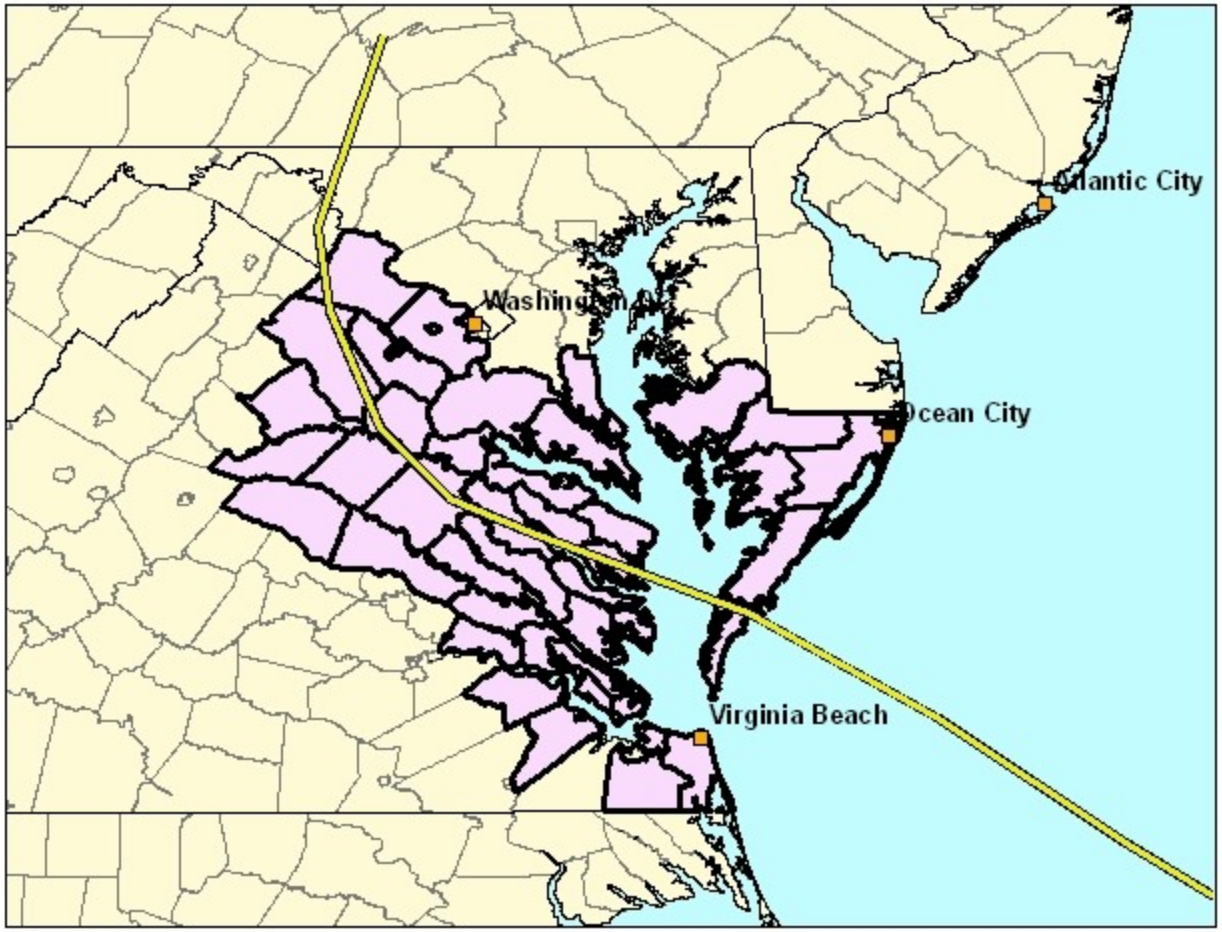

Post Landfall Temporary Housing Model Results

Virginia - 12,000
Maryland - 1,800

Model results per County on following page

This model is based on a Category 3 storm making landfall near Exmore, VA.

Historic Track

Temporary Housing

- < 2,000 units
- 2,000 - 3,999 units
- 4,000 - 5,999 units
- 6,000 - 9,999 units
- > 10,000 units

Information provided on this page displays a Category 3 storm making landfall near Exmore, VA. These projections are based on information from the NHC (1100 EDT 09/16/2007) forecast. Temporary housing is based on 1% in CAT 1, 3% in CAT 2 and 5% in CAT 3.

Details about this model may be obtained at http://www.englink.usace.army.mil or contact Louisville District staff at DLL-CELRL-GIS@usace.army.mil

Hurricane Dean 1983 Housing Model	
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Sources: HURREVAC LRL-DEBRIS	Page 10 of 13

US Army Corps of Engineers

Hurricane Dean 1983 Temp Housing Model

Landfall Plus About 12 Hours

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State	House Units per State	County	House Units per County
Maryland		Calvert	200
		Charles	300
		Dorchester	< 100
		Somerset	300
		St Marys	800
		Wicomico	< 100
		Worcester	200
Maryland	1,800		
Virginia		Accomack	700
		Caroline	300
		Charles City	< 100
		Chesapeake	< 100
		Culpeper	< 100
		Essex	200
		Fairfax	< 100
		Fauquier	200
		Fredericksburg	300
		Gloucester	500
		Hampton City	700
		Hanover	< 100
		Isle Of Wight	< 100
		James City	300
		King And Queen	< 100
		King George	300
		King William	200
		Lancaster	300
		Loudoun	< 100
		Louisa	< 100
		Manassas City	< 100
		Mathews	200

State	House Units per State	County	House Units per County
Virginia		Middlesex	300
(continued)		New Kent	< 100
		Newport News	700
		Norfolk City	800
		Northampton	300
		Northumberland	300
		Orange	< 100
		Poquoson City	200
		Prince William	900
		Richmond	200
		Spotsylvania	900
		Stafford	1,000
		Surry	< 100
		Virginia Beach	1,500
		Westmoreland	300
		Williamsburg	< 100
		York	400
Virginia	12,000		

Temporary housing is based on 1% in CAT 1, 3% in CAT 2 and 5% in CAT 3.

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or contact Louisville District staff at DLL-CELRL-GIS@usace.army.mil

Hurricane Dean 1983 Housing Model

Generated By:
Siemsen, LRL 1130 EDT 09/16/2007

Sources:
HURREVAC
LRL-DEBRIS

US Army Corps of Engineers

Hurricane Dean 1983 Temp Roofing Model

Landfall Plus About **12** Hours

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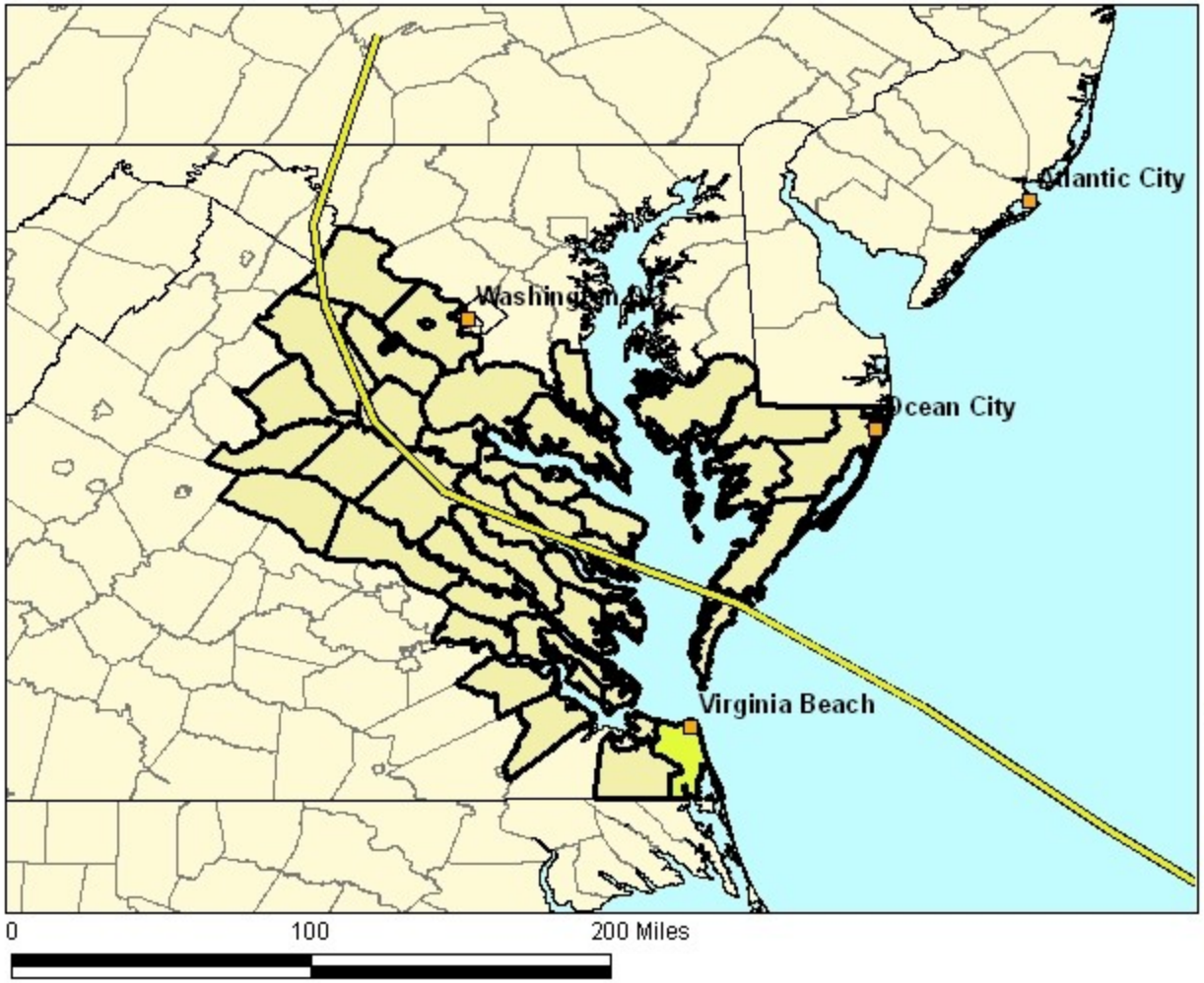

Post Landfall Temporary Roofing Model Results

Virginia - 21,400
Maryland - 2,900

Model results per County on following page

This model is based on a Category 3 storm making landfall near Exmore, VA.

Historic Track

Temporary Roofing

- < 2,000 units
- 2,000 - 3,999 units
- 4,000 - 5,999 units
- 6,000 - 9,999 units
- > 10,000 units

Information provided on this page displays a Category 3 storm making landfall near Exmore, VA. These projections are based on information from the NHC (1100 EDT 09/16/2007) forecast. Temporary roofing is based on 2% in CAT 1, 5% in CAT 2 and 8% in CAT 3.

Details about this model may be obtained at http://www.englink.usace.army.mil
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Hurricane Dean 1983 Roofing Model	
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Sources: HURREVAC LRL-DEBRIS	Page 12 of 13

US Army Corps of Engineers

Hurricane Dean 1983 Temp Roofing Model

Landfall Plus About 12 Hours

For Official Use Only!

State	House Units per State	County	House Units per County
Maryland		Calvert	300
		Charles	400
		Dorchester	< 100
		Somerset	400
		St Marys	1,300
		Wicomico	200
		Worcester	300
Maryland	2,900		
Virginia		Accomack	1,100
		Caroline	400
		Charles City	< 100
		Chesapeake	< 100
		Culpeper	< 100
		Essex	300
		Fairfax	< 100
		Fauquier	400
		Fredericksburg	500
		Gloucester	800
		Hampton City	1,300
		Hanover	200
		Isle Of Wight	< 100
		James City	500
		King And Queen	200
		King George	400
		King William	300
		Lancaster	400
		Loudoun	< 100
		Louisa	< 100
		Manassas City	200
		Mathews	300

State	House Units per State	County	House Units per County
Virginia		Middlesex	400
(continued)		New Kent	200
		Newport News	1,400
		Norfolk City	1,500
		Northampton	500
		Northumberland	500
		Orange	< 100
		Poquoson City	300
		Prince William	1,700
		Richmond	300
		Spotsylvania	1,500
		Stafford	1,700
		Surry	< 100
		Virginia Beach	3,000
		Westmoreland	400
		Williamsburg	< 100
		York	700
Virginia	21,400		

Temporary roofing is based on 2% in CAT 1, 5% in CAT 2 and 8% in CAT 3.

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or contact Louisville District staff at DLL-CELRL-GIS@usace.army.mil

Hurricane Dean 1983 Roofing Model

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Sources:
HURREVAC
LRL-DEBRIS